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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/273,448 | 03/22/1999 | SHINGO OHKAWA | 1185.1044/JD | 7146 |
| 21171 7590 02/01/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | EXAMINER NGO, HUYEN LE | |
| | | | ART UNIT | PAPER NUMBER |
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| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/273,448

Applicant(s)

OHKAWA, SHINGO

Examiner

Julie-Huyen L. Ngo

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-22 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-22 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features recited in claim 13, "***the first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source,***" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

It appears from figure 2 that **both** first and second slopes receive light from the **same** light source (1), and the same slope receives light from different light sources (2). (See figure 2 attached to the previous Office Action).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet"

Art Unit: 2871

or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The amendment filed December 13, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

After page 12, line 15, please insert:

"The slopes 9A mainly receive light from said fluorescent lamp 11B and the slopes 9B mainly receive light from the fluorescent lamp 11A."

Applicant is required to cancel the new matter in the reply to this Office Action.

Although, the specification was objected in the previous Office action as failing to provide proper antecedent basis for the claimed subject matter recited in claim 13 regarding "***the first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source***"; however, it appears that these limitation was amended to the claims during the prosecution and has not been included in the original application as filed neither in the drawing nor in the specification; therefore, the above amendment to the specification can not be entered nor accepted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. (US5963280A) in view of Oyama et al. (US5808708A) and further in view of Miyashita et al. (US6011602A).

With respect to claims 13 and 25, Okuda et al. teach (Fig. 4, col. 16, line 62 to col. 17, line 17) a liquid crystal display including a liquid crystal display panel and a surface light source device of side light type for backlighting of the liquid crystal display panel, said surface light source device comprising:

- a first guide plate
- a first primary light source 17 with red color disposed beside the first guide plate
- a second guide plate
- a second primary light source 8 with blue color disposed beside the second guide plate
- said first guide plate having two major faces to provide a first emission face and a first back face and having a minor face to provide a first incidence end face which is supplied with illumination light from said first primary light source 17
- said second guide plate having two major faces to provide a second emission face and a second back face and having a minor face to provide a second

Art Unit: 2871

incidence end face which is supplied with illumination light from said second primary light source 8

- said first guide plate and said second guide plate being laminatedly arranged so that said second back face extends along said first emission face
- said first incidence end face and said second incidence end face being located oppositely to each other across said laminatedly arranged guide plates,
- a light control member (the scattering layers 14 and 16) to control directivity of output illumination light is disposed along said second emission face.

However, Okuda et al. fail to disclose the following features recited in claims 13 and 25:

1) said light control member is a prismatic light control member having a great number of pairs of first and second slopes disposed along said second emission face so that said first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source to control directivity of output illumination light

2) a driving circuit to drive the first primary light source and the second primary light source

Miyashita et al. teach (Figs. 23-25) forming a prismatic light control member 321 with a great number of pairs of first and second slopes to control directivity of output illumination light, said prismatic light controller member is disposed along an emission

Art Unit: 2871

face of the light guide 307. The first slopes mainly receive light 305 from one side/direction of the light guide or from the light source 322, and the second slopes mainly receive light 306 from another side/direction of the light guide to control the directivity of the light illuminated from the light guide for improving the frontal illumination performance.

Therefore, it would have been obvious for one of ordinary skill in the art to modify Okuda surface light source device with Miyashita's prismatic light control member 321 having a great number of pairs of first and second slopes to control directivity of output illumination light, and to dispose said prismatic light control member along the second emission face of Okuda's second guide plate so that the first slopes mainly receive light from the first primary light source 17 and the second slopes mainly receive light from said second primary light source 8 for improving the frontal illumination performance, as taught by Miyashita et al.

Although Okuda et al. do not clearly disclose a driving circuit to drive the first primary light source and the second primary light source. One of ordinary skill in the art would have known that there must be a driver circuit to drive/control the light sources for adjusting the intensity of output light from the light source or for selectively outputting a specific color display as evidenced by Oyama with the control circuit 16 for controlling the light sources 3 on the back surface of the light guiding plates 4114 (Figs. 2, 3 and 8, col. 1, lines 26-33, col. 7, lines 24-27 and col. 11, lines 26-28).

Therefore, It would have been obvious for one of ordinary skill in the art to employ a driver circuit such as the control circuit 16, as taught by Oyama, to drive or control the first primary light source 17 and the second primary light source 8 in the surface light source device of Okuda LCD for adjusting the intensity of output light from the light source or for selectively outputting a specific color display.

With respect to claim 14, it would have been obvious for one of ordinary skill in the art to selectively turning off one of the first and second primary light sources to adjust the intensity of light output or for selecting a specific color display. Therefore, the driver circuit in Okuda in view of Oyama LCD device would obviously capable of turning off only one of the first and second primary light sources.

With respect to claims 15 and 16, Okuda et al. teach (Fig. 4) that said first and second guide plates have wedge-shaped cross sections so that said first and second incidence end faces are located at thicker ends of the cross sections, respectively.

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. in view of Oyama et al. and Miyashita et al. as applied above to claims 13-16, and further in view of Ohkawa (US 5997148).

Okuda et al. in view of Oyama and Miyashita LCD device fails to disclose the features recited in claims 17-20.

Ohkawa teaches (figs. 1 and 2 and col. 5, line 32-col. 6 line 14) forming a great number of projection rows 102 running approximately at right angles with respect to the incidence end face 12A on the lower edge/back face 12B of a guide plate 12 for preventing the reflective appearance have a possibility to influence the directivity of characteristic of emission light from the emission surface 12C of light guide 12. Doing so would suppress the appearance of bright light entering the vicinity of the lower edge EI and provides output light having high uniformity.

Therefore, it would have been obvious for one of ordinary skill in the art to form a great number of projection rows running approximately at right angles with respect to the first incidence end face on the first back face of the first light guide in Okuda in view of Oyama and Miyashita LCD device for suppressing the appearance of bright light entering the vicinity of the lower edge and provides output light having high uniformity, as taught by Ohkawa.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda in view of Oyama and Miyashita et al. as applied to claim 13, and in further view of Arai (US6049649).

Okuda et al. in view of Oyama and Miyashita LCD device fails to disclose the features recited in claims 21 and 22.

With respect to claim 21, a prism sheet (light control member) is conventionally used to modify the preferential propagation direction such as frontal direction of output light in a surface light source device such as the light control members 4/14 disclosed

Art Unit: 2871

by Arai (figures 3,4 and 11-18). This light control member is provided with slopes on the inner reflection surface facing the emission surface of the guide light to modify the directivity of illumination output light from the light guide and for uniform illuminating of the output light.

Therefore, it would have been obvious for one of ordinary skill in the art to employ a light control member having the slopes provided on the inner reflection surface in Okuda in view of Oyama and Miyashita LCD device to modify the directivity of illumination output light so that illumination output light originated from any one of the first and second primary light source is directed to the frontal direction with respect to the second emission face, as taught by Arai.

With respect to claims 22, the light control member employed in Okuda LCD in view of Oyama, Miyashita and Arai as applied to claim 21 above would obviously has an inner face provided with a great number of projection rows running approximately parallel with respect to the second incidence end face, wherein each of said projection rows including a pair of first and second slopes for modifying the directivity of illumination output light from the second emission surface of the second guide plate.

Response to Arguments

Applicant's arguments filed on December 13, 2006 have been fully considered and are persuasive; however, Miyashita et al. prismatic array/light control member (321) as shown in Figure 23 can still meet the recitations in the claim 13 as set forth below.

Applicant's ONLY arguments are:

Okuda does not teach the claimed dividing up of received light. Furthermore, Miyashita teaches element 321 having first and second slopes, however, there is no light emitted from the light guide plate, as shown in Fig. 25 of the reference. Neither of the slopes receives light 306. Instead, slopes on the right side are only used for inner reflection after light receiving is completed by the upper flat face opposite both slopes.

Examiner's responses to Applicants' ONLY arguments are:

Applicant is to note that light from opposite directions/sides that are directed / reflected by the light guide 311 are directed and passing through the prismatic light control member (321) in Miyashita et al. device in the direction perpendicular to the emitting surface of the prism as shown in figure 23, and more clearly in figures 29, 31 and 32 with light from opposite directions/sides of the light guide are directed by both slopes of the prismatic light control member (430, 530 and 630).

Note that once Miyashita's prismatic light control member 321 is disposed along the second emission face of Okuda's second guide plate (see figure 4 of Okuda), the first slopes would mainly received light from said first primary light source 17 and said second slopes would mainly received light from said second primary light source 8 for improving the frontal illumination performance in Okuda surface light source device, as taught by Miyashita et al.

Therefore, Okuda surface light source device as modified by Miyashita would obviously capable to perform the claimed features recited in claim 13 for having the first

Art Unit: 2871

slopes mainly receive light from said first primary light source 17 and said second slopes mainly receive light from said second primary light source 8.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on M-Thursday.

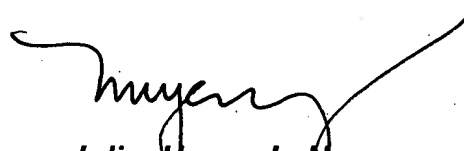
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. David Nelms can be reached at (571) 272-1787.

Art Unit: 2871

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 26, 2007



Julie Huyen L. Ngo
Primary Examiner
Art Unit 2871